



South Eastern Health  
and Social Care Trust

# Annual Infection Prevention & Control Report 2017 - 2018

Infection Prevention and Control Committee  
July 2018

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# Executive Summary

This report has been produced by our Infection Prevention & Control Committee (IPCC). It provides an overview of the work streams outlined in the IPCC Annual Action plan 2017-2018 which is taken from themes contained within the Trust Infection Prevention and Control Strategy 2015-2018.

The membership of the IPCC represents Directorates across the acute and community settings of the Trust and the Corporate Directorates who support them. There is a strong commitment to preventing all avoidable healthcare-associated infection and as such the prevention and control of infection remains a high priority for the Trust.

The content of this report gives details of Infection Prevention Control (IPC) activities, successes and ongoing improvement work which were taken forward this year to reduce avoidable Healthcare-associated Infections (HCAI). It has been a challenging year with continued increased demand on services, nursing shortages and ongoing acute care bed pressures. An increased incidence in influenza also contributed to this, many patients with underlying medical conditions presented to our hospitals for acute care. Trust residential facilities and private care homes (within the Trust catchment area) were also affected.

Overall we have achieved significant milestones this year. We met the Department of Health / Public Health Agency (PHA) targets for Meticillin-resistant *Staphylococcus aureus* (MRSA) blood stream infection and whilst the *Clostridium difficile* infection target was not met none of the cases were judged to be attributed to transmission within our hospitals.

In addition, efforts were focused to prepare for the transfer of inpatient wards and the Day Procedure Department from Ards hospital, into the new inpatient ward block on the Ulster Hospital site in May 2017.

I would like to express thanks to all who have contributed to this important work which is core to helping in the delivery of high quality care and ensuring a safe and positive experience for all of those patients and carers who use our services.



**Nicki Patterson**

Director of Primary Care Older People & Nursing  
Lead Director for Infection Prevention & Control

# Surveillance and Healthcare-associated Infection (HCAI) reduction targets

Meticillin-resistant *Staphylococcus aureus* (MRSA) bacteraemia and *Clostridium difficile* infections (CDI).

The annual target (set by the Northern Ireland Department of Health (DOH) for 2017-2018), was to have no more than 6 MRSA blood stream infections and 49 *Clostridium difficile* infections reported across the Trust's acute hospitals.

In relation to MRSA bloodstream infection the Trust's aim was to:

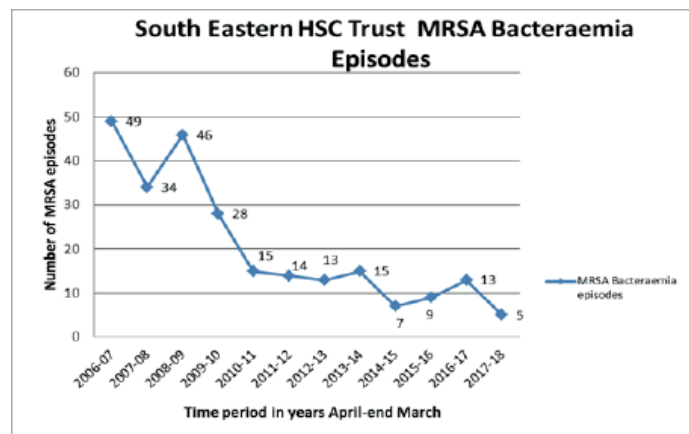
- Continue to embed the application of aseptic principles when managing invasive devices to reduce blood stream infections.

A timely post-infection review was carried out in all of the cases of MRSA bloodstream infections and these processes have helped share learning and improve the management of patients with invasive devices in place. Targeted screening programmes of patients thought to be at risk of MRSA carriage (and thus potentially developing an MRSA infection) have been revised. This facilitates the implementation of appropriate patient care planning.

This year approximately 12500 patients were admitted to our Trust hospitals each month. Therefore it was positive to note that the target for MRSA bloodstream infections was met, especially with the increase in demand for acute beds.

Graph one, shows the steady decline in cases since the formation of the Trust in 2007 amidst an overall increase in acute care activity.

**Graph One: South Eastern HSC Trust's MRSA Bloodstream Infections  
1 April 2007 - 31 March 2018**

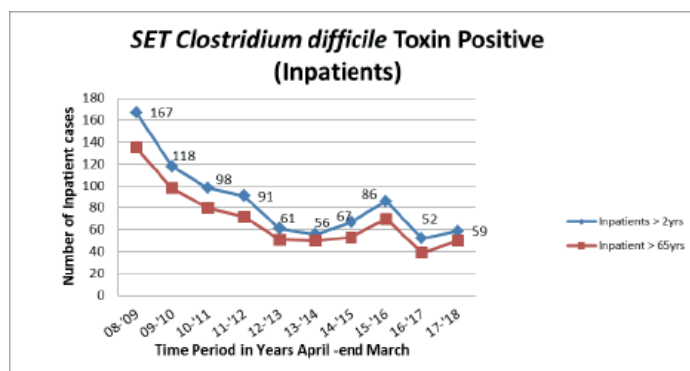


In relation to *Clostridium difficile* infection (CDI) 59 cases were reported, so the target was not met. There is a growing aging population with complex medical needs who require admission to our hospitals. Most have received multiple courses of antibiotic treatment for infection both in hospital and in community; hence this is a trigger for antibiotic-related diarrhoea and CDI. Systems within our hospitals are in place to ensure that antibiotics are prescribed appropriately in line with the Trust guidelines. Patients who developed diarrhoea were prioritised for side room isolation and tested for *C. difficile* infection or for carriage of this bacterium in the gut. The opening of the new inpatient ward block with single room/ensuite facilities has helped with this process.

Case reviews have provided assurance that there is a high level of compliance with the Trust's first line empirical antibiotic prescribing guidelines and IPC related practice when managing patients in hospital who present with diarrhoea. There is more work to be undertaken in respect of reducing antimicrobial use and this will be taken forward in 2018-2019.

We continue to inform GP's when their patient is identified as having *Clostridium difficile* infection or carriage whilst in hospital. Patients are also given written advice on what to do should their diarrhoea return or they require another course of antibiotics at some stage in the future. This approach has now been implemented across the region.

**Graph Two: *Clostridium difficile* infections reported across the Trust from 2007 to 31 March 2018 against the increase in acute care activity**



## *Escherichia coli* (*E. Coli*) blood stream infections

*E. coli* is a germ which is part of the normal bowel flora. Patients have been found to be colonised with resistant strains of this bacterium, (colonisation means that the bacterium is found on body parts not causing any harm), some have had active infection. This is usually *E. coli* bacteria with resistance to beta-lactam antibiotics (these are normally used to treat severe infections). We have monitored this closely as part of our alert surveillance programme and there has been no associated transmission links across our facilities.

In 2017 the Trust IPC team commenced work with the PHA to pilot data collection of *E. coli* blood stream infections with a view to introducing a regional electronic surveillance system (known as HI-surv), in the spring of 2018. In conjunction with the PHA all hospital Trusts across the region participated in a workshop in which South Eastern Trust IPC team presented their experience in contributing to this initiative. This included discussions around how such information would be published and used.

As of the 1 April 2018, all cases of *E. coli* *Pseudomonas aeruginosa* and *Klebsiella* species bloodstream infections should be reported to PHA using HI-Surv. This will include the collection of a data of associated risk factor information for Gram-negative bloodstream infections. The intelligence gathered from this will inform target improvement efforts to reduce Gram-negative bacteraemia infection which is in line with the Department of Health's (NI) aim to reduce healthcare associated Gram-negative bacteraemia by 50% by 2021. The majority of these infections usually develop in the community, spontaneously (part of the patient's own gut flora). However, with the development of resistant strains of these bacteria reviewing trends is important to better understand what patient groups are at risk of developing blood stream infections from these bacteria.

As *E. coli* urinary tract infection is more common within community settings, work commenced this year with the PHA to scope the feasibility of introducing a urinary tract infection checklist (for residents over 65 years) into our residential care facilities. This tool can help with the risk assessment, diagnosis and management of older people presenting with symptoms of an infection in which a urinary infection maybe the cause. This will be introduced in 2018-19 within the Trust's residential care facilities.

## **Glycopeptide-resistant enterococci (GRE)**

Enterococci are bacteria found in the faeces of most humans and many animals. More than a dozen species of *Enterococcus* are currently recognized, and of these, two species, *E.faecalis* and *E.faecium*, are the most important causes of enterococcal infections in humans.

Resistance to the glycopeptide group of antibiotics including vancomycin and teicoplanin is an emerging problem in some countries. The trend within the Trust is that most of clinical isolates of *Enterococcus* species, whether glycopeptide-susceptible or resistant, represent colonisation rather than infection, which is typically endogenous, (part of the patient's own gut flora). This year a very small number, reported to the infection prevention and control team, (less than 5) were identified as blood stream infection. All measures were taken to ensure that relevant infection prevention and control precautions were in place and the patients were treated appropriately.

## **Carbapenamase- producing enterobacteriaceae (CPE)**

Enterobacteriaceae refers to a group of bacteria which usually live harmlessly in the bowel, but can cause urinary tract infections or pneumonia. When such extreme resistance to antibiotics develops, infections caused by such bacteria are difficult to treat.

This year a very resistant strain of Carbapenamase- producing enterobacteriaceae (CPE) was identified as part of a routine screening exercise of patients carried out in accordance with National guidelines. A follow up exercise of patient contacts being cared for in the same area was undertaken and no transmission was identified. We will continue to work with the Public Health Agency and other Trusts to keep this emerging resistance of such bacteria under close review.

## **Group A Beta-Haemolytic Streptococcal infection**

This bacterium can be found on the skin and throat without causing any problems. In some instances the bacteria can cause throat and mild to severe skin and soft tissue infection. In the first quarter of 2018 the PHA had reported an increase in scarlet fever (a condition associated with this bacterium). This was similar to the rest of the United Kingdom (UK), highlighted in Public Health England publications, (2017-2018). Scarlet fever was once a very common and dangerous disease in the UK, but antibiotic treatment means it is now much less serious.

A small number around 6% of Group A Beta-Haemolytic Streptococcal isolates (identified from laboratory samples reported to the IPC team) were taken from patients presenting with tonsillitis. Around 7 % of the cases were treated as invasive infections. All of the cases were considered to be community-acquired and there were no cases linked to transmission in hospital.

# Surveillance of infection within the Critical Care Unit

The Critical Care Unit at the Ulster Hospital provides intensive nursing and medical care for patients requiring essential lifesaving support. Lots of skills are required and the multidisciplinary team (including support, physiotherapy and dietetics staff) strive to work to very high standards. Many of the patients being managed within the unit have multiple tubes and lines going into their body which are an essential part of their treatment. Unfortunately sometimes with all the best care and attention infection can develop and this can require additional intervention.

The Critical care unit contribute to a regional surveillance programme which was introduced in June 2011. This includes the monitoring of central venous catheter, urinary catheter infection and ventilator-associated pneumonia. The information is sent to the Public Health Agency for collation enabling the unit to benchmark against other centres in the province. We are delighted to report that to date there have been no device-associated infections reported since the programme commenced and only one ventilator-associated pneumonia has occurred during this time frame. Recently one of the nursing staff has been given protected time to support this surveillance initiative and they will work closely with the IPC team and Public Health Agency to validate the information.

## Caesarean Section Wound Infection Surveillance

From 1 January 2017- 31 December 2017 the number of caesarean section wound infections occurring during inpatient stay was 0.19%. The number of infections which occurred post-discharge has reduced slightly to 5.4 % (compared with our figure 5.8% in 2016).

This compared favourably with the NI figures for the same time frame as follows:

Infections occurring during inpatient stay across hospitals in Northern Ireland = 0.17%. The number of SSIs reported in community = 5.3%

An information leaflet has been produced for mothers to provide advice on how to manage their caesarean section wound.

The Trust has been scoping the feasibility of collecting the surgical site infection information electronically in conjunction with PHA. This would reduce the workload for clinical teams working in the maternity units and across community as the current method used is a paper form. This will be taken forward in 2018-19.

# Orthopaedic Wound Infection Surveillance

From 1st January 2017 – 31st December 2017) the overall average surgical site infection (SSI) rate = 0.6%. A slight increase in infections was noted at the beginning of 2017. Investigations concluded that all of the cases were very complex with medical conditions that can predispose the patients to infection. None were considered to be linked to transmission.

The Northern Ireland SSI rate for the same time frame was SSI rate = 0.28%. A new dressing has been introduced to promote wound healing following surgery and we will continue to keep this under review.

## Tuberculosis (TB) Working Group

The key work strands for TB across the Trust include:

- a. TB case management
- b. TB vaccination
- c. Latent TB Screening of high /at risk groups in community
- d. Latent TB screening in Northern Ireland Prisons.

TB vaccination and case management continued as set out by best practice and Trust policy. The appointment of a Public Health - TB Prevention Nurse from October 2016 – September 2017 enabled the implementation of a clear patient management pathway for latent TB screening across the Trust's community catchment area. Referrals from GPs and other agencies in the community were made for those at risk of Latent TB. This included immigrants and the homeless.

The continued six monthly review of TB cases in the Trust and regionally has provided a valuable method of assurance of appropriate case management and this has facilitated a process of continuous improvement in practice.

Resource to commence a pilot project for latent TB screening within the Northern Ireland prison population has been provided by the Public Health Agency which will enable some estimation of provision required for a full and region wide service.

A three year plan of work for the Trust's TB service is in development and an annual plan of work continues to be implemented.



# Outbreaks and increased incidents of infection

## Norovirus (viral gastroenteritis)

The Trust reported all increased incidents of infection (as is usual practice), to the PHA duty room over the year. The number of Trust facilities closed or partially closed due to norovirus/vomiting and diarrhoea outbreaks was much less than last year.

We have now obtained funding so that patient samples (sent from Trust residential or hospital facilities), can be tested quickly by the Ulster Hospital laboratory using the in-house norovirus polymerase-chain reaction (PCR) test. This new system quickly identifies the presence of norovirus from diarrhoeal samples and allows for early decision making in relation to patient management and the need for bed closure.

**Table One: Outbreaks of vomiting and diarrhoea across Trust facilities from 1 April 2017 - 31 March 2018**

Hospital/Community facilities	Number of wards/ areas affected	Causative organism Identified
Residential care facilities	4	None identified
Ulster Hospital	0	
Lagan Valley Hospital	2	None identified

## Influenza and Flu-like illnesses

A review of Trust Influenza plans was undertaken to prepare for winter pressures associated with influenza.

An increased incidence in patients being admitted with influenza and flu-like symptoms commenced in October 2017 and peaked in February 2018. This occurred during a period of increasing bed pressures and resulted in the admission of patients with influenza affecting their underlying medical conditions. Many private care homes across the Trust catchment area were closed to admissions which delayed patient discharges. Some support was offered by Trust community nursing teams to local care homes to manage residents with symptoms without having to transfer them to hospital where clinically appropriate.

Details of the number of influenza cases were sent to the Public Health Agency/Health & Social Care Board as part of the annual regional seasonal influenza surveillance programme.

An article was also produced for the Trust Facebook page to give the public general advice about flu and what to do if symptoms developed. Trust staff were provided with information giving the key principles on managing patients with influenza / flu-like symptoms on the Trust electronic app Microguide ®. (This App can be downloaded free on to electronic devices for staff use).

# Improvement initiatives to reduce HCAI

High Impact Interventions (HII) are nationally agreed key elements of practice which were introduced within the Trust in 2009 to reduce the risk of device-associated infection. These care bundles, (a checklist or aid memoire) enable staff to record interventions during the insertion and ongoing management of peripheral cannula and urinary catheters and to promote good hand hygiene practice.

This is monitored closely to attain an overall standard of 95% compliance.

Illustration One (taken from the HCAI Electronic Dashboard) shows compliance against the Trust standards for HII at the end of March 2018. There is still some work to do around the management of peripheral venous catheters. This relates to the completion of documentation around elements of the care of the device.

Observational audits carried out over the last three years have provided assurance that good practice around the care management of devices are in place. Over this timeframe around 500 vascular access devices were surveyed and no device-associated infection was identified during the period of the audit(s). There are plans to review the method of collecting information on the management of peripheral devices going forward in 2018-19

## Illustration One: Trust compliance with hand hygiene, peripheral and urinary catheter standards at end of March 2018

		Hand Hygiene	PC - Insertion	PC - Ongoing	UC - Insertion	UC - Ongoing
SET		96%	93%	94%	91%	88%
	Compliant / Audited	1986 / 2071	338 / 363	320 / 341	129 / 142	158 / 179

DirectorateGroup	Directorate	Hand Hygiene	PC - Insertion	PC - Ongoing	UC - Insertion	UC - Ongoing
Adult Services	Disability	93%	N/A	N/A	N/A	100%
	Mental Health	100%	N/A	N/A	N/A	N/A
Hospital Services	Medical	95%	91%	95%	92%	91%
	Surgical	97%	96%	91%	89%	84%
	Women & Child Health	100%	94%	96%	N/A	N/A

# Involving the Public / Patients and Users

## 5 May World Hand Hygiene Day

The Trust's IPC team took opportunity to remind staff and service users of the importance of hand hygiene in reducing the transmission of harmful bacteria and viruses.

This year, as well as a public notice board display and public engagement in the hospital foyer, the team utilised the Trust's Information Communication Technology (ICT) systems. A desktop background with the heading 'Hand on heart, do you miss opportunities?' was produced and displayed for two weeks on all Trust computers. This prompted staff to consider if they took all opportunities for hand hygiene in their clinical practice. The team collaborated with colleagues in the Renal unit and produced a short 'mannequin challenge' video. This film showed the 7 essential steps of hand hygiene (showing how to clean hands effectively). This was placed on the Trust's YouTube channel. This video was viewed around 700 times extending the reach of this important message into the public domain.



Visits to Trust Residential facilities were also undertaken to promote hand hygiene awareness.

## International Infection Prevention & Control week 16 -23 October 2017

During the week the Trust's IPCT undertook activities to raise awareness of infection, prevention control throughout the Trust.

A notice board was set up near the front of the Ulster, Lagan Valley and Downe hospitals (for staff, patients and visitors) providing information on influenza, norovirus, antibiotic usage and hand hygiene. Details of staff influenza vaccination "drop-in" clinics were also displayed.

The IPCT visited a number of departments. These included the Elderly Care One Stop assessment centre, the physiotherapy department and secretarial staff. Education sessions on hand hygiene using "glowie" were carried out to demonstrate to staff how effective their hand hygiene technique was. These sessions were well received by all the staff involved. Thanks to all of those staff who participated.



# Patient Experience Services

## Environmental Cleanliness

All facilities across the Trust undergo regular environmental cleanliness audits to measure compliance with Regional standards.

These are carried out by the Trust's Patient Experience Quality Monitoring Team and the relevant patient experience supervisor for the area.

All locations within the healthcare environment are classified into the following relevant risk categories:

- Very High
- High
- Moderate.

It is against these categories that individual schedules of cleaning are established and monitored. This helps ensure the allocation of adequate numbers of cleaning staff and resources in each of the areas.

The Policy for The Provision and Management of Cleaning Services issued by the Department of Health Northern Ireland ( in January 2015), stipulated that Very High Risk and High Risk Areas' Scores were to be reported against the standards set for cleaning duties undertaken by support services staff and the nursing (clinical) teams.

As a consequence of no longer reporting on the condition of the estate, the acceptable level of cleanliness in Departmental Audits which was set at 85% compliance in DOH 'Cleanliness Matters', publication was subsequently increased to 90%.

Audits have been carried out using this new Regional Audit tool from Quarter 1 2015.

Since January 2017 a new management structure for environmental cleanliness Trust wide has been developed. This has resulted in the streamlining of procedures across the Trust to ensure cleaning schedules, processes and responsibilities are standardised to enhance and improve the environment for patients and ensure cleanliness standards are fully compliant.

The opening of the new inpatient ward block (Ulster Hospital) to enable transfer of 12 wards and other clinical services into the building in May and June of 2017 has contributed immensely to improving the care environment.

## Food Safety

Since April 2017 six Trust facilities have been inspected by the local Councils' Environmental Health Officer(s) and all have achieved a score of 5. Overall, 32 of the Trust's 35 facilities have now achieved a food hygiene practice rating of 5. This is the highest score to be awarded to a facility by the Environmental Health Department. It is positive to note that the remainder of all facilities have a food hygiene rating of 4.

Food safety training for all food handlers, including ward domestic and nursing staff continues as part of a rolling programme. Work is underway to commission and open the new purpose built kitchen and dining area in the Acute Services ward block Ulster Hospital in 2019-2020.

## Central Sterile Supplies Department (CSSD)

CSSD continued to provide a decontamination service for the Trust, Community facilities and external Private clinics. Decontamination of instruments for the Trust Dental and Podiatry services have been successfully centralised into CSSD at the Ulster Hospital. Following external inspection the CSSD also achieved accreditation to the new medical devices quality management standard ISO13485:2016 on 7th March 2018.

A number of initiatives have been implemented as a result of ongoing quality improvement projects and to meet the requirements of Health Technical Memorandum (HTM) 01-01 and HTM 01-06. Endoscope decontamination previously undertaken in Ards Hospital has moved to the new endoscopy reprocessing unit in the CSSD at the Ulster Hospital. A new service for the maxillo- facial team was introduced recently to enable automated decontamination of newly purchased non-channelled endoscopes.

## Laundry

The Laundry retained accreditation to quality management system ISO 9001:2015 and also won a national Laundry award for Innovation. The team used their initiative by using the hospital laundry and existing transport to offer no-cost laundry to home-based elderly and ill patients in the community. This is the second year running that the laundry staff has won an Award for their efforts. In the previous year the staff worked tirelessly to provide a top class service to the Trust's hospitals and facilities during disruption caused by building works and they devised and implemented usable and effective disinfection solutions.

A laundry project group is in place and are finalising plans to tender for a new modern purpose built facility. This will incorporate a clean room to produce sustainable linen procedure packs for theatres. Construction of the new laundry it is envisaged will commence at the end of 2018 and will be completed by 2019.

## Estates

The Estates team used specifically allocated central funding to conduct a cleanliness survey on all ductwork associated with specialist and general ventilation systems throughout the Trust. As a result a substantial programme of cleaning and maintenance was introduced. This was prioritised against a risk score which meant funding was targeted at the correct areas. An Estates Compliance manager has been appointed part of the role includes feedback of progress reports to the IPCC to and provide assurance that best practice standards are being met with regard to all Estates and associated Healthcare Engineering Systems.

## Water Safety Committee

An inspection was undertaken this year by an independent water safety expert. The overall findings were positive. Recommendations have been actioned and/or included in the Water Safety group annual programme of work. The Trust Water Safety policy has been reviewed recently in conjunction with key stakeholders.

Risk assessments, independent water safety audits and water sampling were carried out at intervals throughout the year across Trust facilities taking into account testing for Legionella and within augmented care areas this included sampling water for the presence of *Pseudomonas aeruginosa*. A plan is in place to take into account potential redundant water outlets when wards are transferred to the new inpatient ward block on the Ulster Hospital site. Work has also been carried out to improve systems on Lagan Valley Hospital in preparation for the construction of the new health centre.

## Pest Control

The pest control electronic monitoring scheme (in place across Trust facilities) adds information to the estates compliance database Zetasafe™. This allows live online reporting of pest control compliance checks and any subsequent remedial actions to the Estates Department. From this perspective, Trust staff and Estates Teams are aware of the action undertaken to address pest control in a timely fashion.

## Capital Development

The Infection Prevention and Control Committee continued to work with the Capital Development and Clinical teams to complete the commissioning of the new Inpatient Ward Block on the Ulster Hospital site.

The Trust accepted hand over of the building from the Contractor in December 2016. The doors opened to receive the first patients on the 1 April 2017, and it is fully operational with the exception of the Cardiac Catheterisation service. Plans have commenced to transfer this service into the new premises in May 2018.

Construction of the second building – the Acute Services Block, is well underway and the Infection Prevention and Control Committee will continue to assist with the commissioning to ensure a smooth handover to the Trust in 2019 and operational opening in early 2020.

In Lisburn on the Lagan Valley Hospital site, enabling works continue in preparation for the proposed Lisburn Primary and Community Care Centre. This will enable the move of community and GP services from the current Lisburn Health Centre.

# IPCT Improvement Plan

The Infection Prevention and Control Team (IPCT) implemented an improvement plan which included monitoring the adherence to policies and guidelines. The audits and outcomes are detailed in the table below:

**Table Three: IPC Audit/improvement and Research Activity undertaken in 2017-2018**

Audit Type/Date	Aim	Outcome/Action
Review the management of respiratory equipment.	To review practices associated with the management and decontamination of respiratory equipment.	Data shows a high level of compliance with management and storage of respiratory equipment, some localised training was required in relation to decontamination of nebuliser masks.
Audit of the completion of regional IPC patient risk assessment tool within nursing admission documentation.	To review compliance with regional guidelines.	Clinical areas using eDAMS (electronic patient care records) were fully compliant. All patients had an IPC risk assessment completed within the designated time (6hours). The team plan to repeat this audit in other areas where eDAMS is not in use.
Observations of phlebitis and infection at peripheral cannulae exit sites Commenced October 2017 over 2 weeks in 1 Medical and 1 Surgical Ward.	To measure the number of cannulae inserted/ removed due to phlebitis or infection A total of 50 lines in 18 patients were followed.	Site of the device was appropriate in 99% of observations. The lines were in place ranging from <24 hours to 8 days. No incidences of a phlebitis scores of Grade 2 or above and no line infections were observed. "Right Line, Right Patient, Right Time" will continue to be promoted.
MRSA Screening and Decolonisation Audit.	To measure compliance with the Trust MRSA Screening and Decolonisation Guidelines in:  Trauma and Orthopaedic wards.  Urology patients prior to undergoing invasive procedures.	There was a 100% compliance rate for MRSA screening of patients on admission to T&O wards.  Some gaps in screening were identified. Information has been shared to improve compliance and a re-audit will be undertaken next year.
Environment (including multidisciplinary) audits carried out across the Trust facilities at intervals throughout the year.	To observe and report on the cleanliness and environment of patient areas.  The Infection Control team completed a number of multidisciplinary audits with Patient Experience/Clinical and Estate services teams.	Where the fabric of the environment has been identified as requiring refurbishment this has been prioritised.  The opening of the inpatient ward block in April 2017 has enhanced the Patient care environment.
Compliance with isolation precautions in targeted areas.	To measure compliance with standards/ guidelines and to monitor practice.	Practice remains excellent throughout all SEHSCT sites audited.

Audit Type/Date	Aim	Outcome/Action
Hand hygiene validation. On-going during the year.	To measure compliance with hand hygiene practice in accordance with Trust standards.	Overall compliance with Hand hygiene remains at a high standard across the Trust.
Prison Healthcare (PHC) audits compliance with hand hygiene, Sharps environment and PPE usage.	Aim to measure compliance against IPS standards for Treatment and Consulting rooms and associated IPC practices.	Significant improvement was noted since the previous audit undertaken in 2015. PHC have an annual IPC improvement plan in place. Local in-house IPC auditing will be established and supported by the IPC team.
Evaluation of a pre-loaded 0.9% sodium chloride syringe for flushing vascular access devices.	To review the value of the pre-loaded syringe in relation to cost, staff time and improvement around the care management of vascular access devices.	This product saved on staff time and reduced the risk of potential contamination of syringe devices compared to the conventional method. There was additional savings made. This product was introduced into the Trust.

## IPC Training / Education Programmes

Extensive training of multidisciplinary staff members continued throughout the year. Tailored programmes for a variety of community staff groups ensured large numbers of staff could avail of training at suitable venues and with a content that was meaningful to their particular area of practice. Induction programmes for new nurses, doctors, healthcare assistants and allied health professionals were well attended. This was to ensure that staff commencing work in the South Eastern H&SC Trust would be aware of the key essential Infection Prevention and Control measures to apply in the care of patients.

During the year, members of the IPC team have assisted regularly with the education of International Nurses undertaking OSCE's (Objective Structures Clinical Examinations) and this will continue in the New Year. In the coming year the IPC team are networking with another Trust IPC team in order to explore the option of increasing the availability of training via e-learning and to introduce more flexible measures of achieving the necessary number of hours of IPC training to fulfil the Trust's mandatory requirements.





# Training Programme 1 April 2017 - 31 March 2018 figures

**Table Four: Number of staff attending IPC Training/Awareness sessions**

<b>PERIOD</b>	<b>STAFF ATTENDANCE AT IPC TRAINING/ AWARENESS UPDATES in 2017- 2018</b> <b>(excludes eLearning and adhoc training provided for other providers and managers)</b>
April 2017 – March 2018	<b>2617</b>

## Antimicrobial Management

The Trust continues to promote prudent antimicrobial prescribing through an antimicrobial improvement plan overseen by the Antimicrobial Stewardship Group.

A major focus this year has been the Trust's participation in two large global surveys of Healthcare-associated infection, antimicrobial resistance and antimicrobial use.

- Northern Ireland Regional Hospital-acquired Infection and Antimicrobial Point Prevalence Survey in acute hospitals (2017)
- Survey of Healthcare-Associated Infection & Antibiotic Use in Long Term Care Facilities in Northern Ireland (HALT 2017).

Both surveys were coordinated by the PHA and one of the Trust IPC Leads was the principle facilitator in both surveys. Data collection was undertaken in June 2017 by the Infection Prevention & Control and Antimicrobial Pharmacy team.

The results of these surveys aim to direct interventions to improve and maintain prudent antimicrobial prescribing, continued application of IPC practices to manage and reduce antimicrobial resistance in these sectors.

The Trust Antimicrobial Pharmacy Lead and Consultant Microbiologist continued to participate in regional working groups including work to progress improved governance arrangements for patients receiving Outpatient Parenteral Antimicrobial Therapy (OPAT) and a working group to standardise the prescription and monitoring of narrow spectrum antimicrobials across the region.

The Trust antimicrobial pharmacy team were part of the regional antimicrobial pharmacy network nominated and selected as finalists for the Northern Ireland Hospital pharmacy team of the year, 2017.

**Figure One: Regional Antimicrobial pharmacist Network at Northern Ireland Hospital Pharmacy Team of the Year Awards, February 2018**



A major focus of improvement work in the Trust has been the development of updated guidelines on the prescription and monitoring of glycopeptide antibiotics. Glycopeptide (Vancomycin and Teicoplanin) antimicrobials require close monitoring and adjustment of doses to ensure patient safety and optimal treatment of infections. A vancomycin calculator has been incorporated within the Trust microguide®. The new glycopeptide guidelines along with revised aminoglycoside guidelines were launched in August 2017.

A comprehensive programme of training on the guidelines was rolled out across the trust to support their introduction.

## Antimicrobial Training

Antimicrobial Stewardship training programmes delivered by the Antimicrobial Pharmacist team and Consultant Microbiologists continue to develop and encompass an ever increasing and wider range of Trust staff and trainees. This year stewardship training was introduced in the induction programme for all grades of pharmacy staff and nurse assistants.

**Table Five: Number of staff attending Antimicrobial Stewardship sessions**

PERIOD	STAFF ATTENDANCE ANTIMICROBIAL STEWARDSHIP TRAINING in 2017- 2018 (excludes eLearning and adhoc training provided for other providers and managers)
April 2017 – March 2018	438

**Table Six: Antimicrobial Improvement, Audit and Research Activity 2017-2018**

Audit	Overview / Outcome	Action
<p>Northern Ireland Regional /Global Hospital-acquired Infection and Antimicrobial Point Prevalence Survey (June 2017)</p>	<p>The Trust participated in the 2017 PHA/ Global Prevalence Survey on Hospital-acquired Infections (HAIs) and on Antimicrobial Use.</p> <p>The HAI rate across the South Eastern Trust was 3.5% (compared to 3.6% in the 2012 survey). An overall Northern Ireland level of 6.1% HAI was reported.</p> <p>38.39% of SET patients were prescribed antimicrobials which is higher than the regional prevalence (N.I 36.3%) of total patients receiving antimicrobials. The Downe hospital had a higher prevalence of antimicrobial use of 51.28% whilst Lagan Valley hospital had the lowest prevalence with 36.9%.</p> <p>SET had a lower percentage of patients on parenteral antibiotics at 59.6% compared to the regional average of 62.7%.</p> <p>Compliance with local antimicrobial guidelines was 74.6% for the trust compared to the regional average of 72.9%.</p> <p>Surgical antimicrobial prophylaxis has improved with 73.7 % of patients receiving single dose compared to less than 50% in the previous 2012 survey.</p>	<ol style="list-style-type: none"> <li>1. Continue to embed IPC practice around device care and other measures to prevent HAI and manage resistance.</li> <li>2.Focus on reducing antimicrobial usage in the Trust</li> <li>3.Improvement plan to be developed by Antimicrobial Stewardship Group</li> <li>4.Promote Start Smart, Then Focus – Trust policy and via education to all prescribers</li> <li>5.Pursue DDD antibiotic usage data and audit reporting using Trust Dashboard – measurable outcomes and onward trust learning</li> <li>6.SET performance indicators – reduce antibiotic usage by reducing total antibiotic, piperacillin/ tazobactam and carbapenem use trust wide</li> </ol>

Audit	Overview / Outcome	Action
<p>Audit of Aminoglycoside Monitoring,</p> <p>August 2017-March 2018</p>	<p>Two quality improvement projects were undertaken by junior medical staff to ascertain:</p> <ul style="list-style-type: none"> <li>• The percentage of gentamicin samples taken correctly in the 19-24 hours after the first dose</li> <li>• If a serum creatinine was taken along with gentamicin sample and documented on the aminoglycoside prescription chart.</li> <li>• If patients receive daily U&amp;E monitoring whilst receiving gentamicin.</li> </ul> <p>Results: 58% of patients had a U&amp;E sampled on the same day as gentamicin level sampled, 42% had daily U&amp;E monitoring and only 21% had the Serum Creatinine documented on the prescription sheet.</p>	<p>Introduce a gentamicin profile which automatically requests a serum creatinine be tested and reported with the gentamicin result.</p>
<p>'Think Switch':</p> <p>Audit of Start Smart then Switch guidance,</p> <p>Apr-July 2017</p>	<p>A proforma 'Think Switch' was developed in the Downe hospital to be inserted into the medication chart of inpatients commenced on IV antimicrobials. The aim of the proforma was to prompt 48hour review of IV antimicrobials.</p> <p>Use of this visual prompt was poor with less &lt;50% uptake of Think Switch approach. In patients where the prompt was applied the average length of IV antibiotic course and total length of course was reduced.</p>	<p>The 'Think Switch' proforma is to continue to be evaluated with proposed adoption by all consultant teams in future roll out.</p>
<p>South Eastern Trust Antimicrobial usage Qlikview dashboard</p>	<p>A multidisciplinary working group led by antimicrobial pharmacist has been set up to develop an electronic dashboard to collate and display information on the use of antimicrobials in the Trust.</p> <p>This is an interactive dashboard which presents analysis of the volume and type of antimicrobials being used at hospital, directorate and ward level. This will allow monitoring of trends in antimicrobial usage and facilitate comparison of wards and departments</p>	<p>An ICT project mandate has been approved to progress this work-stream.</p>

Audit	Overview / Outcome	Action
<p>Audit of compliance with antimicrobial bundle in a respiratory ward, September 2017</p>	<p>An audit of antimicrobial prescribing was undertaken to assess compliance with 5 measures of good prescribing in an antimicrobial bundle.</p> <p>Allergy status documented on all medication charts (100%)</p> <ul style="list-style-type: none"> <li>• Indication documented on 85% of charts</li> <li>• Duration/review documented on 15% of charts</li> <li>• Evidence of review at 48-72hours on 85% of charts</li> <li>• Compliance with guidelines 80%.</li> </ul>	<p>Documentation of duration/review date to be raised at ward meetings and encouraged at ward rounds.</p>
<p>Hospital-onset diarrhoea prevalence, aetiology and management in the UK: the HOODINI study, January –June 2016</p>	<p>The Trust participated in a large UK study investigating the prevalence and causes of Hospital-onset diarrhoea (HOD), led by one of the IPC Leads. Four wards in the Trust were surveyed on two separate occasions (January and June) by the IPC and Antimicrobial Pharmacy team.</p> <p>Conclusions:</p> <ul style="list-style-type: none"> <li>• At least one cause of HOD was identified in almost all patients.</li> <li>• Certain causes (e.g. constipation with overflow, laxatives) are common and treatable.</li> <li>• Rigid adherence to current UK guidance on testing will potentially miss <i>C.difficile</i> cases.</li> </ul>	<p>The higher prevalence of HOD was in teaching hospitals</p> <p>Areas for future UK research:</p> <p>Addressing the common causes of HOD</p> <p>Understanding the factors that influence <i>C.Difficile</i> testing practices.</p> <p>The report is to be published in the British Medical Journal.</p> <p>Trust <i>C. difficile</i> management and Patient Flow policies gives clear direction on prompt assessment and isolation of patients presenting with diarrhoea.</p>

## Electronic surveillance software systems

Much work has been undertaken in order to improve systems which can alert staff if a patient has a history of an infectious condition or who is colonised with a bacterium known to cause outbreaks of infection. This has included collaboration with colleagues across the region to establish local requirements and identify the resources required to introduce a regional system so that patients can be cared for appropriately. Within the Trust hospitals the IPCT have worked with the Informatics Communication & Technology (ICT) teams to develop an alert on the e-whiteboards in wards. This system ensures that staff are aware of patients with infection and they can be isolated and managed promptly as required.

# IPC Service Controls Assurance Accreditation 2017 -2018

A baseline assessment was carried out in order to ensure that the IPC service and governance arrangements were compliant with DOH Controls Assurance standards. 93% (substantive compliance (above 75%)) was achieved. The Trust has been informed by the DoH that these standards will be replaced in 2018-19. For some years the Trust have been using IPC best practice recommendations published by the National Institute of Clinical Excellence (NICE), (the latter are used during RQIA inspections), to ensure that high standards and governance arrangements are in place. It is envisaged that this system will continue as well as the implementation of the new standards proposed by the DoH.

## Guidelines and Policies

Infection Prevention and Control guidelines and policies undergo a review process in accordance with Trust protocols. This year work has been undertaken in conjunction with other Trusts and the Public Health Agency to update the Northern Ireland Regional Infection Control Manual web-site. This work will continue for part of this year.

There are a total of 35 South Eastern HSC Trust policies and guidelines relating to infection prevention and control and aspects of antimicrobial prescribing. Eleven of these have been reviewed and updated in this year and nine require review within the incoming year 2018-19. The IPC team continue where possible to summarise policies and guidelines on a page to enable staff and clinical team to have easy reference material relating to key aspects and standards of practice.

# IPCC Plans for 2018-2019

- Develop and produce a three year IPC Strategy 2018-2021
- Continue to reduce avoidable healthcare-associated infections and antimicrobial resistance
- Work with PHA to introduce Gram Negative blood stream infection surveillance and other surveillance initiatives
- To review the IPC Annual Training Programmes and scope the feasibility of introducing a new elearning programme across the Trust to support mandatory training
- To further develop the Trust's Antimicrobial prescribing guidelines and work to embed Antimicrobial Stewardship by producing and implementing an antimicrobial improvement plan
- To further develop the Trust's Antimicrobial smart phone application 'Microguide®' to incorporate paediatric prescribing guidelines and infection prevention and control advice
- To further embed the care management of vascular access and invasive devices and reduce the incidences of false-positive blood cultures
- To review the Trust's MRSA screening guidelines following the issue of the DOH/PHA recommendations from recent regional audit
- To work with Capital development, Estates and Contractors in planning for the construction of new buildings and renovations across the Trust
- To work to implement the Trust's TB Action Plan
- To ensure IPC Policies and Guidelines are reviewed and updated and work with the PHA to support review of the Northern Ireland Infection Control Manual
- To review the IPC Improvement programme in light of past findings and as part of continuous outcomes based improvement
- To contribute to the Trust's Water Safety Programme
- Continue to support and influence the development of Regional Electronic Surveillance systems and the use of electronic systems within the IPC service
- Work with PHA to introduce a urinary infection management checklist with the Trust's Residential Care Homes.

